

REMARKSRequest for Reconsideration

Applicant has carefully considered the matters raised by the Examiner in the outstanding Office Action but remains of the opinion that patentable subject matter is present. Applicant respectfully requests reconsideration of the Examiner's position based on the following remarks.

Claims Status

Claims 1 and 10 had been examined and are presented herein for further prosecution.

The Present Invention

The present Invention is directed to a ray curable ink which uses a non ionic surfactant in an aqueous solution of a polymerizable compound and an initiator.

One of the problems with ray curable inks in an aqueous solution is that they don't have enough stability of ink and wetability to the recording material. Applicant has discovered that by adding non ionic surfactants to the ray curable aqueous ink composition enables the ink to form an image having a high definition with superior text

quality resistance to color mixing and image flatness, see paragraphs bridging pages 4 and 5 and 5 and 6.

The examples clearly teach a unique aspect of the non ionic surfactant in the light curable type aqueous resin composition. It will be noted that Comparative Example 1 in Table 1-1 on page 42 contained no surfactant while Comparative Examples 2 and 3 each contained a surfactant. Comparative Example 2 contained Surfactant 1, a cationic surfactant, while Comparative Example 3 contained Surfactant 2, an anionic surfactant. The rest of the ink compositions, namely, 4 through 8 as recited on page 43, each contained non ionic surfactants, i.e. Surfactants 3-6. Specific surfactants are recited on page 44 of the Application.

Turning to Table 3-1 and 3-2 on pages 52 and 53 of the Application, it can be seen that the ink of the present Invention performed better than the comparative inks which contain either no surfactant or contain cationic or anionic. Thus, it is submitted that the data in the examples of the Application clearly support the fact that the combination of a non ionic surfactant with a light curable type aqueous resin ink composition is unique.

Rejection

Claims 1-10 have been rejected as being unpatentable over a combination of Noguchi and Owatari. Applicant respectfully traverses this rejection.

First, Applicant submits that it is improper to combine Noguchi with Owatari. The reason that the combination is improper is because Noguchi is directed to ray curable inks while Owatari is directed to an ink jet ink which is not ray curable. The ink disclosed in Owatari is a totally different type of ink than the ray curable ink of the present Invention and the ray curable ink of Noguchi. Thus, since the two inks are different, Owatari and Noguchi, it is respectfully submitted it is improper to combine the teachings of Owatari with Noguchi.

Second, even if it were proper to combine Noguchi with Owatari, Applicant submits that Noguchi teaches away from the present Invention. Noguchi teaches away from the present Invention for two reasons. First, Noguchi teaches an ink composition which has no surfactant at all. It will be noted, however, that Noguchi does teach that its pigment dispersion can contain an anionic surfactant, see paragraph

86. Thus, if one of skill in the art would add a surfactant to Noguchi's composition one would add an anionic surfactant since an anionic surfactant is used in the pigment dispersion. Thus, it is respectfully submitted that Noguchi teaches away from use of a non ionic surfactant and is teaching in the direction of an anionic surfactant. As pointed out in the test data in the Application, there is a difference between anionic surfactants and non ionic surfactants and, therefore, it is submitted that one of skill in the art would not arrive at the present Invention based on the teachings of Noguchi and, in fact, based on the teachings of Noguchi, one would be led away from the present Invention.

Furthermore, it is submitted that Owatari also teaches away from the present Invention. Owatari teaches four different types of surfactants, anionic surfactants, amphoteric surfactants, cationic surfactants and non ionic surfactant, see Column 3, lines 26-29. Thus, it is submitted that Owatari is teaching all four surfactants and not specifically directing one of skill in the art to the non ionic surfactants.

In addition, if one were to combine Noguchi with Owatari, it is submitted that one would use the anionic

surfactants of Owatari since Noguchi is teaching use of anionic surfactants with his pigment dispersion.

Conclusion

It is respectfully submitted that it is improper to combine Noguchi with Owatari and, even if one were to combine the references, one would not arrive at the present Invention because the combination would teach anionic surfactants not non ionic surfactants.

In view of the foregoing, it is respectfully submitted that the Application is in condition for allowance and such action is respectfully requested. Should any fees or extensions of time be necessary in order to maintain this Application in pending condition, appropriate requests are

hereby made and authorization is given to debit Account
#02-2275.

Respectfully submitted,

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